Claims:

1. A process for eco-friendly synthesis of bromobenzene which comprises the steps of:
   (i) dissolving about 200 to 400 grams of a brominating reagent containing about 35 to 45% wt/wt of active bromine per liter of water to obtain an aqueous solution;
   (ii) adding about 2 to 10 mole equivalents of benzene per atom of bromine to the aqueous solution of step (i);
   (iii) adding a surfactant to the mixture of step (ii) under constant stirring;
   (iv) refluxing the reaction mixture of step (iii) at temperature in the range of about 50 to 80°C;
   (v) adding a mineral acid in the concentration range of about 3 to 4 equivalents per atom of bromine to the refluxed reaction mixture of step (iv);
   (vi) stirring the mixture of step (v) for a time period in the range of about 20 to 48 hours at elevated temperatures;
   (vii) cooling the mixture of step (vi) and separating the same into an organic layer and an aqueous layer;
   (viii) extracting the aqueous layer of step (vii) with an organic solvent;
   (ix) combining the extracts of the organic layers and washing the layers successively with water and brine;
   (x) drying the organic layer of step (ix) over anhydrous sodium sulfate, and
   (xi) stripping off the organic solvent to obtain crude product and distilling the crude product to obtain clear and colorless bromobenzene.
2. A process as claimed in claim 1 wherein in step (i), the brominating reagent used contains about 40% wt/wt of active bromine.
3. A process as claimed in claim 1 wherein in step (i), the brominating agent used has bromide to bromate ratio in the range of about 1.8:1 to about 2.2:1.
4. A process as claimed in claim 1 wherein in step (iii), the surfactant used is sodium lauryl sulfate.

5. A process as claimed in claim 1 wherein in step (iv), the reaction mixture is refluxed using water condenser.
6. A process as claimed in claim 1 wherein in step (v), the mineral acid used is selected from sulfuric acid, hydrochloric acid and perchloric acid.
7. A process as claimed in claim 1 wherein in step (v), the mineral acid is added to the refluxed reaction mixture at the rate of about 1.5 to 4.0 m/hour.
8. A process as claimed in claim 7, wherein the sulfuric acid added is about 50% aqueous sulfuric acid.
9. A process as claimed in claim 7, wherein the hydrochloric acid added is about 35% aqueous hydrochloric acid.
10. A process as claimed in claim 7, wherein the perchloric acid added is about 70% aqueous perchloric acid.
11. A process as claimed in claim 1 wherein in step (vi), the mixture is heated at temperatures ranging between 50 to 80°C.
12. A process as claimed in claim 1 wherein in step (vii), the mixture is cooled to room temperature and separated into an organic layer and an aqueous layer.
13. A process as claimed in claim 1 wherein in step (viii), the organic solvent used is selected from the group comprising of ether, dichloromethane, dichloroethane, ethyl acetate, petroleum ether and benzene.
14. A process as claimed in claim 1 wherein in step (xi), the organic solvent is stripped off at reduced pressure.
15. A process as claimed in claim 1 herein in step (xi), the crude product is distilled under vacuum.
16. A process as claimed in claim 1, wherein the bromobenzene thus obtained has boiling point in the range of 154-156°C.
17. A process as claimed in claim 1, wherein the yield of bromobenzene obtained is in the range of 50 to 90%.